Update

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Application Number		Sub	omit			
IDS	arance for Ap	oplication 0990	1013			
Information				·		1
	Content	Mailroom Date	Entry Number	IDS Review	Last Modified	Reviewer
	M844	2001-07-10	5	Y 🗹	2001-08-13 11:20:29.0	EXPO-CONV

## **EAST Search History**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	158012	robot or robotic	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/03/17 20:02
L2	254	l1 and ultrasound adj2 transducer	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/03/17 20:04
L3	105	l2 and (chamber or chambers)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/03/17 20:06
L4	77	l3 and tissue	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/03/17 20:06

3/17/07 8:12:44 PM

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                 CA/CAplus pre-1967 chemical substance index entries enhanced
                 with preparation role
                CA/CAplus patent kind codes updated
NEWS
         DEC 18
NEWS 5
        DEC 18
                MARPAT to CA/CAplus accession number crossover limit increased
                 to 50,000
NEWS 6 DEC 18
                MEDLINE updated in preparation for 2007 reload
NEWS 7 DEC 27
                CA/CAplus enhanced with more pre-1907 records
                CHEMLIST enhanced with New Zealand Inventory of Chemicals
NEWS 8 JAN 08
        JAN 16
NEWS 9
                CA/CAplus Company Name Thesaurus enhanced and reloaded
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                WPIDS/WPINDEX/WPIX enhanced with IPC 8 reclassification data
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NEWS 13 JAN 22
                CA/CAplus enhanced with patent applications from India
NEWS 14 JAN 29
                PHAR reloaded with new search and display fields
NEWS 15 JAN 29
                CAS Registry Number crossover limit increased to 300,000 in
                multiple databases
                PATDPASPC enhanced with Drug Approval numbers
NEWS 16 FEB 15
NEWS 17 FEB 15 RUSSIAPAT enhanced with pre-1994 records
NEWS 18 FEB 23 KOREAPAT enhanced with IPC 8 features and functionality
NEWS 19 FEB 26 MEDLINE reloaded with enhancements
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NEWS 21 FEB 26 TOXCENTER enhanced with reloaded MEDLINE
NEWS 22 FEB 26 IFICDB/IFIPAT/IFIUDB reloaded with enhancements
NEWS 23 FEB 26 CAS Registry Number crossover limit increased from 10,000
                to 300,000 in multiple databases
NEWS 24 MAR 15
                WPIDS/WPIX enhanced with new FRAGHITSTR display format
NEWS 25 MAR 16 CASREACT coverage extended
NEWS EXPRESS
             NOVEMBER 10 CURRENT WINDOWS VERSION IS V8.01c, CURRENT
             MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
             AND CURRENT DISCOVER FILE IS DATED 25 SEPTEMBER 2006.
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=> s robot or robotic

2381 ROBOT

2232 ROBOTIC

L1 4176 ROBOT OR ROBOTIC

=> s l1 and ultrasound(w)transducer

76720 ULTRASOUND

23981 TRANSDUCER

186 ULTRASOUND (W) TRANSDUCER

L2 0 L1 AND ULTRASOUND (W) TRANSDUCER

=> s l1 and ultrasound

76720 ULTRASOUND

L3 23 L1 AND ULTRASOUND

=> s 13 and tissue

691610 TISSUE

L4 1 L3 AND TISSUE

=> d ti ab

L4 ANSWER 1 OF 1 CA COPYRIGHT 2007 ACS on STN

TI Methods and systems for applying multi-mode energy to biological samples AB A system for applying energy to cells so as to elicit the formation of pores, to enhance transfection, and/or cell transformation, includes a computer, a plurality of acoustic probes for controllably applying acoustic energy to batches of cells, and a robot operatively for effecting relative movement between the probes and the batches of cells. Preferably, the acoustic energy comprises ultrasonic energy, which is applied in combination with optical or elec. energy to enhance the formation of pores in surface membranes of the cells.

samples)

```
ANSWER 1 OF 1 CA COPYRIGHT 2007 ACS on STN
L4
AN
     139:273261 CA
     Entered STN: 23 Oct 2003
ED
     Methods and systems for applying multi-mode energy to biological samples
ΤI
IN
     Unger, Evan C.; Wu, Yunqiu; McCreery, Thomas
     Imarx Therapeutics, Inc., USA
PΑ
     U.S., 20 pp., Division of U.S. Ser. No. 291,502, abandoned.
so
     CODEN: USXXAM
DT
     Patent
LA
     English
TC
    ICM C12N013-00
     ICS C12N015-87
INCL 435173500; 435173100; 435173600; 435461000; 204450000; 204157620;
     204600000
CC
     9-16 (Biochemical Methods)
FAN.CNT 1
     PATENT NO.
                      KIND DATE
                                        APPLICATION NO.
                                                              DATE
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                              -----
                                          -----
PΙ
    US 6627421
                       B1
                              20030930 US 2001-827583 20010405
PRAI US 1999-291502
                       В3
                             19990413
CLASS
 PATENT NO.
               CLASS PATENT FAMILY CLASSIFICATION CODES
 US 6627421
               ICM
                       C12N013-00
              · ICS
                       C12N015-87
                INCL
                       435173500; 435173100; 435173600; 435461000; 204450000;
                       204157620; 204600000
                IPCI
                       C12N0013-00 [ICM, 7]; C12N0015-87 [ICS, 7]
                       C12N0015-87 [I,C*]; C12N0015-87 [I,A]
                IPCR
                       435/173.500; 204/157.620; 204/450.000; 204/600.000;
                NCL
                       435/173.100; 435/173.600; 435/461.000
                ECLA
                       C12N015/87
    A system for applying energy to cells so as to elicit the formation of
AB
    pores, to enhance transfection, and/or cell transformation, includes a
     computer, a plurality of acoustic probes for controllably applying
     acoustic energy to batches of cells, and a robot operatively for
     effecting relative movement between the probes and the batches of cells.
     Preferably, the acoustic energy comprises ultrasonic energy, which is
     applied in combination with optical or elec. energy to enhance the
     formation of pores in surface membranes of the cells.
ST
     system multi energy biol
IT
    Wave
        (Continuous or pulsed; methods and systems for applying multi-mode
       energy to biol. samples)
ΙT
    Apparatus
        (Endoscopic sonoelectroporation; methods and systems for applying
       multi-mode energy to biol. samples)
IT
        (Multi-mode; methods and systems for applying multi-mode energy to
       biol. samples)
IT
        (Optical; methods and systems for applying multi-mode energy to biol.
       samples)
IT
    Organ, animal
        (Perfused; methods and systems for applying multi-mode energy to biol.
       samples)
IT
    Frequency
       (Pulse repetition; methods and systems for applying multi-mode energy
       to biol. samples)
IT
       (Reverse; methods and systems for applying multi-mode energy to biol.
```

```
IT
     Electroporation
     Transducers
         (Sonoelectroporation; methods and systems for applying multi-mode
        energy to biol. samples)
IT
     Animal tissue
        (Thick; methods and systems for applying multi-mode energy to biol.
        samples)
IT
     Apparatus
        (Transcutaneous sonoelectroporation; methods and systems for applying
        multi-mode energy to biol. samples)
IT
        (Ultrasonic; methods and systems for applying multi-mode energy to
        biol. samples)
IT
     Animal tissue culture
        (Unilamellar; methods and systems for applying multi-mode energy to
        biol. samples)
IT
     Acoustic devices
     Apparatus
     Biological materials
     Bioreactors
     Body, anatomical
     Cell
     Cell membrane
     Computers
     Electric current
     Electric energy
     Electric field
     Electrodes
     Energy
     Escherichia coli.
     Frequency
     Materials
     Plasmids
     Pore
     Sound and Ultrasound
     Transducers
     Transformation, genetic
        (methods and systems for applying multi-mode energy to biol. samples)
IT
     Gene expression
     RL: BSU (Biological study, unclassified); BIOL (Biological study)
        (methods and systems for applying multi-mode energy to biol. samples)
IT
     Robotics
        (robot; methods and systems for applying multi-mode energy to
        biol. samples)
IT
     Biological transport
        (uptake; methods and systems for applying multi-mode energy to biol.
       samples)
RE.CNT 13
              THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Abela; US 5246437 A 1993
(2) Anon; WO 9740679 A1 1997 CA
(3) Eppstein; US 5445611 A 1995
(4) Eppstein; US 5885211 A 1999
(5) Kost; US 6041253 A 2000
(6) Lemelson; US 5795755 A 1998 CA
(7) Palumbo; J Photoche Photobil B: Biology 1996, V36, P41 CA
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(9) Stokes, H; Integrons Mol Microbiol 1989, V3(12), P1669 CA
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(12) Weaver; US 5019034 A 1991
(13) Weaver, J; J Cell Biochem 1993, V51(4), P426 CA
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